

Serial No.: 10/707,557
 Confirmation No.: 1556
 Applicant: JONSSON, Bertil
 Atty. Ref.: 07589.0141.PCUS00

REMARKS:**REMARKS REGARDING CLAIMS AMENDMENTS:**

Claims 1 and 7 have been amended and request is made for entry of new claim 13.
 Claims 1 - 13 are pending in the present application.

IN RESPONSE TO THE OFFICE ACTION:

The Examiner's action appears to comply with 37 C.F.R. 1.104(c)(2 - 3) that requires the examiner to cite the best references at his or her command and, when a reference is complex, designate particular parts relied on. However, teachings of the references concerning designated parts seem to be inconsistent with function attributed to those parts by the examiner. Applicant acknowledges that the examiner may rely on facts within his or her knowledge (37 C.F.R. 1.104(c)(3)), but has a reasonable expectation for the examiner to provide source information in support of personal knowledge (37 C.F.R. 1.104(d)(2)).

Discussion of differences between the present invention and the reference includes a table providing requirements of claims of the present invention and a summary of teachings of the references as follows:

Comparison of the present invention with teachings of the references

Claims Requirements of the Present Invention	Savonuzzi (US 3,167,914) Collman et al. (US 3,077,074) Ebel (US 6,131,384) Chan (US 5,127,606) Howard (US 2,625,013)
Claim 1 recites "at least one unitary pressure dividing element (27, 33, 42) that divides off a pressure area (P1, P3, P4, P5, P6) in the gas duct (11)"	None of the references appear to teach a pressure dividing element that divides off a pressure area leading to a series of individual areas of selected pressure in the length of a gas duct.
Claim 1 recites "the pressure dividing element (27, 33, 42) consisting of a pressure wall extending from the wall structure (12, 13, 14) of the gas duct to the outer housing (19, 20, 21)." Claim 7 recites a similar	None of the references teach a unitary pressure dividing element consisting of a pressure wall extending between a gas duct and outer housing of a gas turbine engine.

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requirement. The pressure dividing element corresponds to the unitary structure shown in Figures 2 and 3 of the present invention.	
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REJECTION UNDER 35 U.S.C. § 102:

Before addressing specific bases of rejection, applicant wishes to emphasize that the drawings of the present invention show three modules (Figure 1), identified as elements 6, 7 and 8 in the application, and detail views (Figure 2 and Figure 3) of a unitary separator plate, also referred to as a "pressure wall" produced in a variety of forms for placement between modules. Separator plates according to the present invention close off each module producing a pressure tight module having a separator bolted into position between the duct wall and the housing. Any reference that does not teach a pressure wall, extending from the wall structure (12, 13, 14) of the gas duct to the outer housing (19, 20, 21), is irrelevant as a basis for anticipation of the present invention.

Each of the plurality of modules according to the present invention is a pressure-tight module that includes a pressure wall connected to the wall structure of the gas duct and the outer housing. The installation of a pressure wall on a module enables visual verification of correct fitting for pressure-tight closure of the module before final assembly of the gas turbine engine.

Having carefully reviewed the references selected by the Examiner, applicants disagree that any provide basis for anticipating the present invention. The following brief summaries include evidence that no single reference satisfies the need, under 35 U.S.C. §102, for either expressly or inherently teaching "each and every element" of the claimed invention. In particular, the references of Ebel, Chan and Howard do not address the internal structure of a gas turbine engine.

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Savonuzzi (US 3,167,914)

Savonuzzi does not teach separate pressure-tight modules operating at a selected pressure maintained by a containment structure that includes a pressure wall, as required by claim 1 of the present invention. It appears that the Examiner overlooked the teaching of Savonuzzi (col. 5, lines 28 - 52) concerning the use of seals (89, 90, 91) "effective to prevent the flow of high pressure gases from the chamber 21 into the sector openings 27 and 74a." This provides evidence that conventional seals are used to maintain required pressures in the turbine disclosed by Savonuzzi.

Apparent arbitrary selection of a portion (32) of a figure of Savonuzzi attempts to present a "bulkhead structure 32" as a pressure wall according to the present invention. The reference, at col. 3, lines 43 - 53, teaches "an annular bulkhead structure 32 adjustably connected with an outer shroud 33 for an annular gas passage 34 by means of a ring 35 - -." The use of an adjustable ring by Savonuzzi does not meet the connection means including a flange, as recited in claims of the present invention.

Collman et al. (US 3,077,074)

The teachings of Collman et al. include nothing suggesting a structure including pressure-tight modules. The gas turbine of Collman et al. may be construed to include a conventional "bulkhead" type (c.f. Savonuzzi) wall that separates the high pressure part from the low pressure part. As in Savonuzzi, the bulkhead wall is part of the outer housing. The reference teaches that the gas generator and the power turbine use a connection that includes metal sealing rings. In fact, Collman et al. provides clear teaching of the use of conventional seals under the headings, "The Inner Rim Seals" (col. 12, line 51 to col. 13, line 45) and "The Outer Rim Seals" (col. 13, line 46 -to col. 15, line 25). Although not particularly explicit, the description of the reference suggests that at least the outer rim seals exert some effect relative to pressure differential in the turbine unit (see e.g. column 14, lines 45 - 55).

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Ebel (US 6,131,384)

The inclusion of Ebel as a rejecting reference suggests that the examiner failed to appreciate important features of the present invention. Ebel does not teach a turbine unit, but rather teaches a suspension device for a gas turbine (see Title). The description of Ebel teaches that the component 8 is an annular elbow structure "that connects to or immediately adjacent to the aft end or the extreme section of the outer combustion chamber wall 9a. This description does not in any way suggest that the connector 8 could represent a "pressure wall" as indicated by the Office Action.

Adjacent parts 9a, 6 of the structure of Ebel could be construed as parts of a wall structure. According to the descriptive portion of the reference, they provide a point for connecting a combustion chamber 1 to a "casing wall surrounding the entire combustion chamber." The wall 6, 9a and the connector 8 are not part of a modular turbine structure corresponding to features recited by claim 1 of the present invention.

Chan (US 5,127,606)

Application of Chan as an anticipating reference further suggests that the examiner failed to appreciate important features of the present invention. Chan does not teach a turbine unit, but, like Ebel teaches a mount for attaching a turbine engine (see Title) to a wing or fuselage of an aircraft (see Figure 1 and Figure 2). It is clear from the figures alone that parts (14, 15, 30, 70 etc.) cited by the Office Action are not found adjacent to the duct of a gas turbine engine. The part purported to be "an outer housing (30, 70)" is not a housing, but an "engine mount adapter" (see col. 2, lines 35 - 66), coupled to the engine by several bolted connections each identified by numeral 15. Although represented by the Office Action as "at least one pressure dividing element 76 that divides off a pressure area in the gas duct," element 76 is a shear plate that is part of the engine mount structure.

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Howard (US 2,625,013)

As with the references of Ebel and Chan, the reference of Howard does not deal with the structure of a turbine engine but teaches structure of a gas turbine nozzle (see Title). As anticipated by the title, the teachings of the reference do not include limitations presented in claims of the present invention particularly with regard to separate pressure-tight modules. A perplexing aspect of the Office Action is the selection of a heat shield 37a that appears to have a gap rendering the shield ineffective as a pressure tight element. This is confirmed by reference to col. 8, lines 40 to 45, which states "the static pressure of the cooling air in the space within the shield 37a will be substantially the same as the pressure in the plenum air space between combustor housing 22 and liner 26." A radiation shield 37a (col 7 line 71-col 8 line 4) cannot be a "pressure dividing element" according to the present invention since it should be free to move in an axial direction.

Hörler (4,534,700)

This reference does not show a gas turbine engine structure of significance to claims of the present invention.

The Office Action indicated rejection of claims under 35 U.S.C. §102(b) as being anticipated by each of five references as follows:

Claims 1, 3, 4, 7, 9, 10 were rejected over Savonuzzi (3,167,914).

Claims 1 - 4, 6 - 10, 12 were rejected over Collman et al (3,077,074).

Claims 1 - 12 were rejected over Ebel (6,131,384).

Claims 1 - 4, 6 - 10 12 were rejected over Chan (5,127,606).

Claims 1, 3 - 7, 10 - 12 were rejected over Howard et al (2,625,013).

For there to be anticipation under 35 U.S.C. §102, "each and every element" claimed by the present invention must be found either expressly or inherently described in each of the references of Savonuzzi, Collman et al., Ebel, Chan and Howard et al. This response includes

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evidence that none of these references satisfy the requirements of an anticipating reference since they do not teach or inherently describe at least two requirements according to claim 1 and claim 7 of the present invention (see table above).

Rejection of claim 1 and claim 7 relies upon apparent arbitrary selection of numerals from figures of the references. The Office Action does not designate portions of the references to support the selected numerals used for claims rejection. Such rejection, without reference to the descriptive portion of the reference, causes incomplete appreciation of precisely what a reference teaches. This is particularly evident for the references of Ebel, Chan and Howard et al. These three references do not address subject matter in common with the present invention and should be withdrawn.

Differences between the modular gas turbine structure of the present invention and the references were summarized previously in tabular form. The following discussion adds evidence of how Savonuzzi and Collman et al. each fails to satisfy requirements for anticipating claims of the present invention.

Previously stated evidence reveals teaching of conventional seals by both Savonuzzi (col. 5, lines 28 - 52) and Collman et al. (col. 12, line 51 to col. 13, line 45; col. 13, line 46 -to col. 15, line 25 and column 14, lines 45 - 55). The problems with conventional seals are presented in paragraphs [0005] and [0006] of the present application. Effective sealing means and capability for visual inspection before engine assembly represents an advancement in the art of turbine engine design according to the present invention.

The Examiners selection of numeral 32 for “at least one pressure dividing element” is inappropriate for two reasons. Firstly, the selected portion of Figure 1 of Savonuzzi is clearly part of the engine casting, as shown by cross-hatching used in the cross sectional diagram. Secondly, the portion identified as 32 does not appear to be positioned near a junction in the gas duct. Elements described by the reference as “seals,” e.g. 91 are clearly positioned at a junction in the wall of the duct, but the seals do not span the distance between the wall of the duct and the housing as required by claim 1 and claim 7 of the present invention.

Regarding Collman et al. the examiner identified, “at least one pressure dividing element (40, 34 together). Reference to Collman et al. reveals that element 40 is described as “a bulkhead

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cylinder" that appears to be part of the wall of the gas duct. Numeral 34 designates the bulkhead of the structure (see col. 2, lines 26 to 36). These parts, whether or not combined, do not meet the requirement of claims 1 and 7 of the present invention wherein "at least one unitary pressure dividing element divides off a pressure area in the gas duct at a junction between the two adjacent parts of the wall structure.

In general it appears that rejection of claims 1 and 7, and claims dependent therefrom, relies upon arbitrary assignment of numerals from reference figures to represent features illustrated in the present application. Such selection attributes function to parts identified by the numerals that finds no support in teachings of descriptive portions of the references. Taking into consideration all that each reference teaches, including description and drawings, it is clear that rejection of claims of the present invention under 35 U.S.C. §102(b) is flawed when relying on Savonuzzi (3,167,914); Collman et al (3,077,074); Ebel (6,131,384); Chan (5,127,606) and Howard et al (2,625,013). For this reason, applicant believes that claims 1 and 7 should be allowed. Claims 2 - 6 depend from claim 1 and claims 8 - 12 depend from claim 7 and should likewise be allowed.

In view of the above, Applicant requests the reconsideration and withdrawal of the rejection of claims 1 - 12 under 35 U.S.C. §102(b).

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REJECTION UNDER 35 U.S.C. § 103(a):

Rejection of claims 2, 5, 6, 8 11 and 12 under 35 U.S.C. §103(a) is not sustainable due to the fact that these claims depend from either claim 1 or claim 7, which have been shown to be allowable. Claims depending from an allowable claim should likewise be allowed.

Applicants request that the Examiner reconsider and withdraw the rejection of claims 2, 5, 6, 8, 11 and 12 under 35 U.S.C. §103(a).

NEW CLAIM 13:

New claim 13 has been added to alternatively claim applicant's invention. With respect to the cited references and the discussions concerning patentability found hereinabove, claim 13 also recites pressure wall portions, extending between housing portions and wall portions that constitute the gas duct. Again, these features are not shown, disclosed, taught or even suggested by any of the references of record, either singularly, or in any appropriate combination.

Applicant has made an earnest attempt to respond to all the points included in the Office Action and, in view of the above, submits that the present invention is neither anticipated nor obvious over the cited references. Consequently, request is respectfully made for reconsideration of the application and notification of allowance of claims 1 - 12 and new claim 13 in the next paper from the Office.

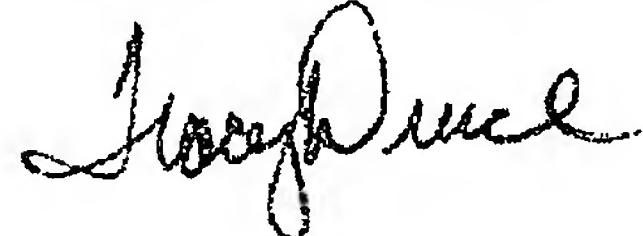
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The undersigned representative requests any extension of time that may be deemed necessary to further the prosecution of this application.

The undersigned representative authorizes the Commissioner to charge any additional fees under 37 C.F.R. 1.16 or 1.17 that may be required, or credit any overpayment, to Deposit Account No. 14-1437, Order No. 07589.0141.PCUS00.

In order to facilitate the resolution of any issues or questions presented by this paper, the Examiner should directly contact the undersigned by phone to further the discussion.

Respectfully submitted,



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